Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended): A method for releasing a therapeutic from a microbubble at a treatment site within a patient's vasculature, the method comprising:

providing a microbubble ~~with~~ that encapsulates a volume of gas, the microbubble comprising a substrate which forms a shell, wherein a light activated drug is coupled to the shell, and wherein the microbubble has a resonant frequency;

coupling a site directing molecule to the light activated drug, wherein the site directing molecule binds with the treatment site when the light activated drug is contacted with the treatment site under predefined physiological conditions; and

delivering ultrasound energy to the microbubble at a frequency that is matched with the resonant frequency of the microbubble, and with a selected intensity which activates the light activated drug, causes ~~to cause a rupture of~~ the microbubble to rupture, and induces cavitation at the treatment site, wherein the selected intensity is less than an intensity sufficient to induce cavitation at the treatment site in the absence of the microbubble.

Claim 2 (original): The method of claim 1, wherein the microbubble is a liposome.

Claim 3 (currently amended): The method of claim 1, wherein the ~~light activated drug is the~~ therapeutic comprises a thrombolytic agent.

Claims 4–5 (cancelled).

Claim 6 (currently amended): The method of claim 1, wherein ~~the~~ an additional light activated drug is enclosed within the microbubble.

Claim 7 (currently amended): The method of claim 1, wherein ~~the~~ an additional light activated drug is included in a media at the treatment site outside the microbubble.

Claim 8 (currently amended): A microbubble, comprising:

a substrate defining a shell of the microbubble and having a thickness permitting hydraulic transport of the microbubble;

a light activated drug that forms part of the shell, and that is activated ~~activatable~~ upon exposure to ultrasound energy, activation of the light activated drug causing a disruption in the shell sufficient to cause a rupture of the microbubble;

a site directing molecule coupled to the light activated drug, wherein the site directing molecule is selected from the group consisting of polydeoxyribonucleotides, oligodeoxyribonucleotides, polyribonucleotide analogs and oligoribonucleotide analogs; and

a therapeutic releasable from the microbubble upon rupture of the microbubble to yield a therapeutic effect.

Claim 9 (currently amended): A method for releasing a thrombolytic agent into a blood vessel, comprising:

encapsulating the thrombolytic agent within a material formed at least in part of a light activated drug having a site directing molecule coupled thereto, wherein the site directing molecule binds with a portion of the blood vessel when the light activated drug is contacted with the blood vessel under predefined physiological conditions;

delivering the thrombolytic agent into the blood vessel; and

emitting ultrasound energy at a frequency and intensity which activates the light activated drug and thereby releases the thrombolytic agent from the material.

Claim 10 (new): The method of Claim 9, wherein the site directing molecule is coupled to the light activated drug using a linker.

Claim 11 (new): The method of Claim 10, wherein the linker is selected from the group consisting of amides, amines, thioethers, ethers and phosphate covalent bonds.